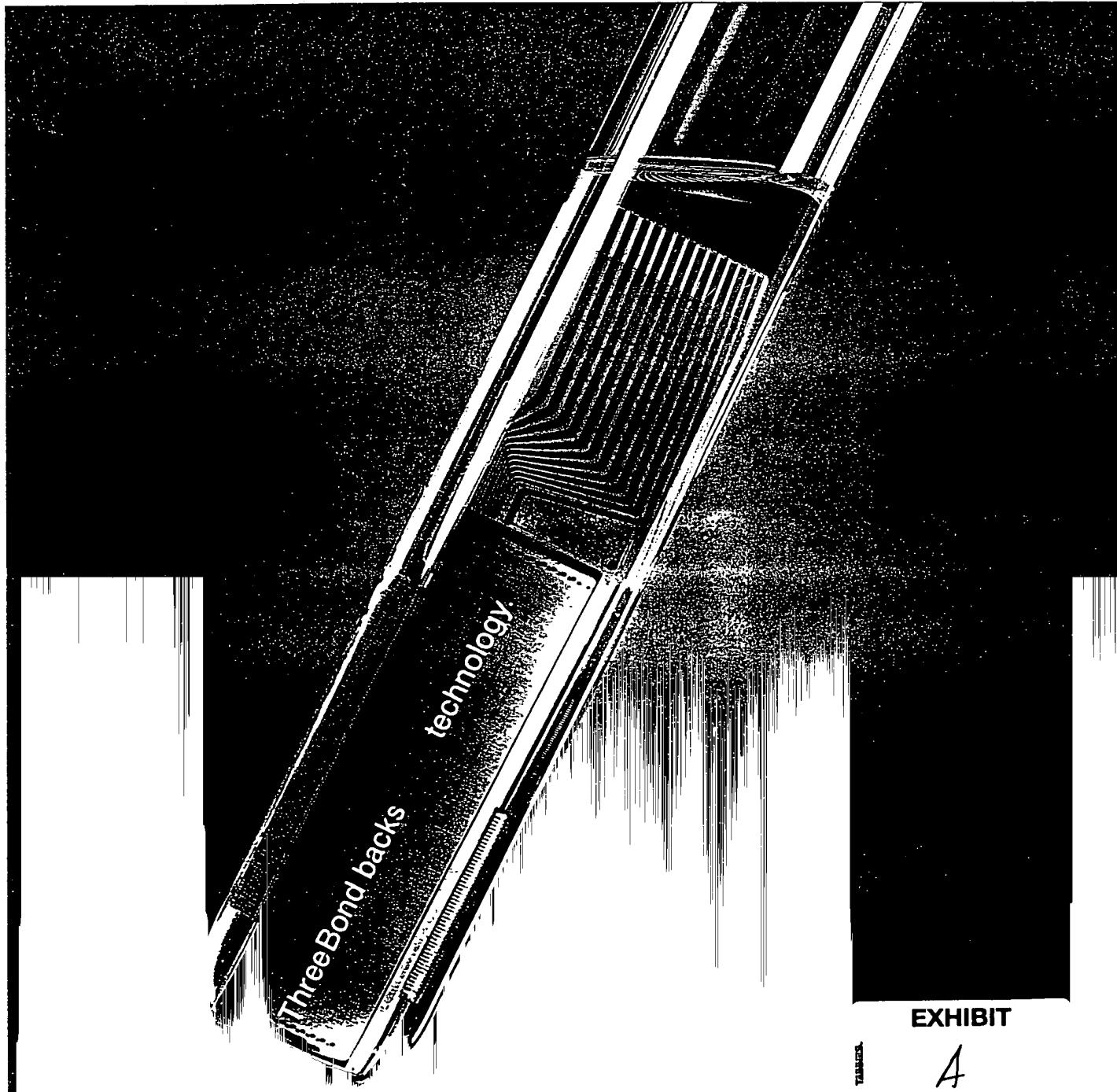


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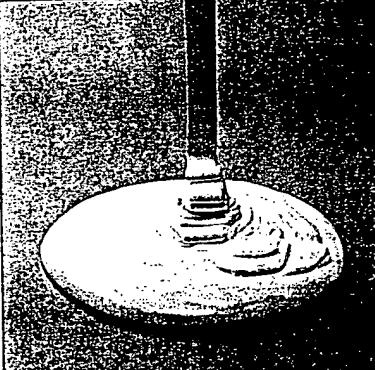
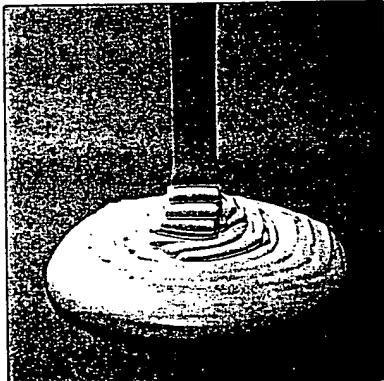
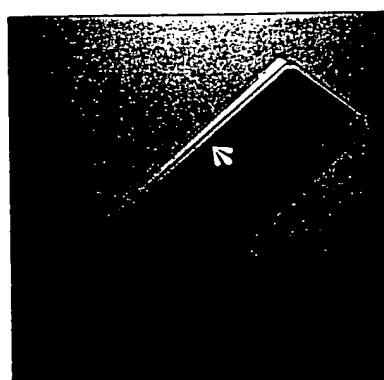
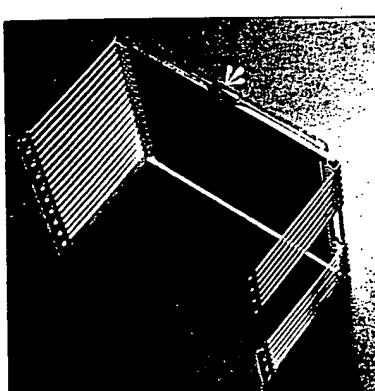
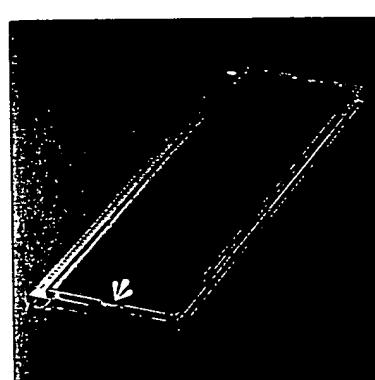
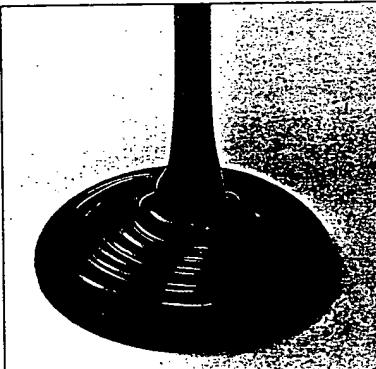
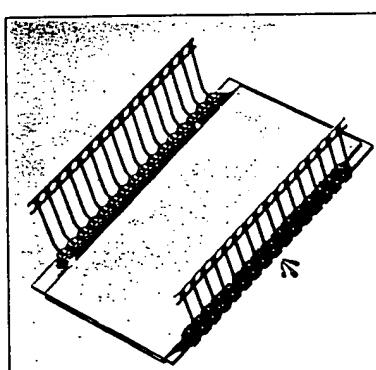
# High Performance Sealant for Display Manufacturing Processes

Main (Edge) Sealant, End Cap Sealant,  
Pin Attaching Sealant, Moisture Barrier Sealant,  
Anisotropic Conductive Film (ACF),  
Anisotropic Conductive Adhesive (ACA).

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Main(Edge) Seal for LCD	End Cap Seal for LCD	Pin Seal for LCD
<p><b>UV Curable Epoxy Resin</b> <b>ThreeBond 30Y-184G, 184H</b></p> <p>30Y-184 series has been developed for Main(Edge)Sealing application. After applying sealant by dispensing or screen printing, assemble two pieces of glass. Cures in 30-40 sec.</p> <p>These keep high accuracy gap of the cell. Also these sealants contribute to advanced fine-pitch panel manufacturing process.</p> <p><b>■Main Feature</b></p> <ul style="list-style-type: none"> <li>①Single Component UV Cure System On line assembly possible because of shorter cure time than thermal curing epoxy.</li> <li>②Excellent Dimensional Stability.</li> <li>③Excellent Bonding Strength.</li> <li>④High Purity.</li> <li>⑤Low Moisture Permeability. Main Sealant must be made of substances that restrict permeation of moisture as much as possible.</li> <li>⑥Non Solvent Based System.</li> </ul> <p><b>■Container Size:250g Plastic Bottle</b></p>   	<p><b>UV Curable Resin</b> <b>ThreeBond 3051, 3052, 3026</b></p> <p>These products have been developed for End Cap Sealing application.</p> <p>Used for end cap sealing after filling liquid crystal into the cell. Does not contaminate liquid crystal even at uncured stage.</p> <p><b>■Main Feature</b></p> <ul style="list-style-type: none"> <li>①Single Component, UV Cure System.</li> <li>②No Contamination with LC.</li> <li>③Excellent Dimensional Stability.</li> <li>④Low Moisture Permeability.</li> </ul> <p><b>■Container Size:250g Plastic Bottle</b></p>  	<p><b>UV Curable Resin</b> <b>ThreeBond 3050B, 3055B</b></p> <p>These products have been developed for Pin Attaching Sealant application. Specifically for attaching pin lead and glass. After curing, it has excellent environmental resistances characteristics.</p> <p><b>■Main Feature</b></p> <ul style="list-style-type: none"> <li>①Colored Formulation. Colored sealant is required for easy confirmation to inspect on the glass.</li> <li>②Quick Curable UV System.</li> <li>③Excellent Low Temperature Characteristics.</li> <li>④Excellent Bonding Strength at HighTemperature.</li> <li>⑤High Purity.</li> </ul> <p><b>■Container Size:1kg Plastic Bottle</b></p>  

## Moisture Barrier Seal

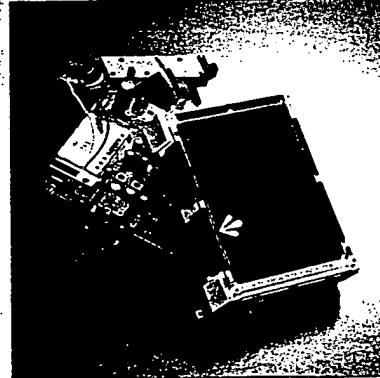
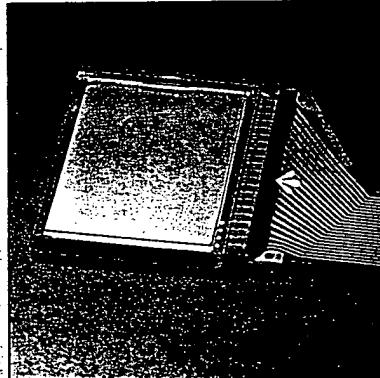
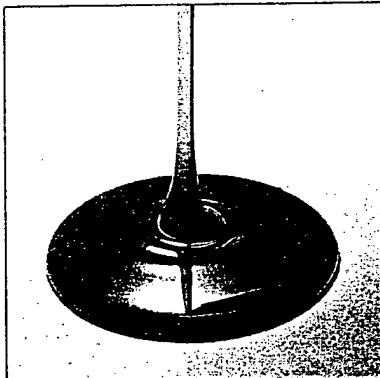
### UV Curable Resin ThreeBond 3027B

These products have been developed for Moisture Barrier Sealing application. Used for over-coating on interconnecting area between FPC and ITO electrodes. Contributes to high reliability of panels.

#### ■ Main Feature

- ① High Purity.
- ② Excellent Barrier Characteristics.
- ③ High Repairability.

#### ■ Container Size: 250g, 1kg Plastic Bottle



## Anisotropic Conductive Film

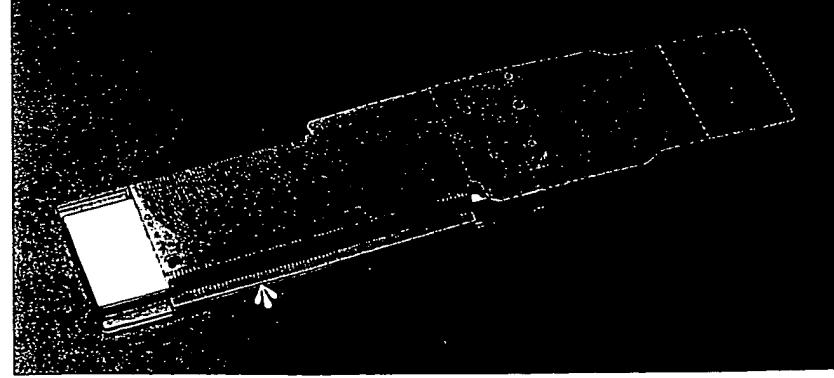
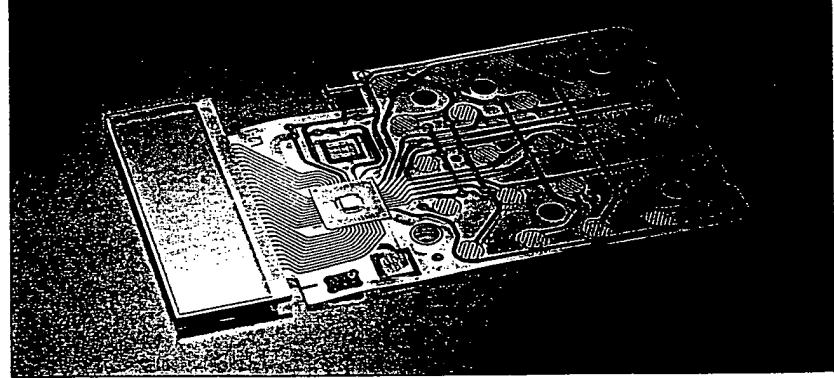
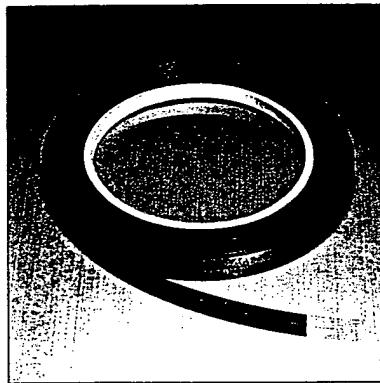
### Thermoset Type Film & Thermoplastic Type Paste ThreeBond 3370K, 3370G

TB3370K has been developed for interconnecting FPC and ITO. This is an anisotropic conductive thin film. Easy to connect by heat-press.

#### ■ Main Feature

- ① Connect all electrode at once.
- ② Possible to connect 0.1mm pitch.
- ③ Able to connect on areas impossible for soldering.

#### ■ Package Size: 2,3mm x 50M



TB3370G is screen-printable liquid anisotropically conductive paste. Can apply adhesive layer on fine-pitched circuit board.

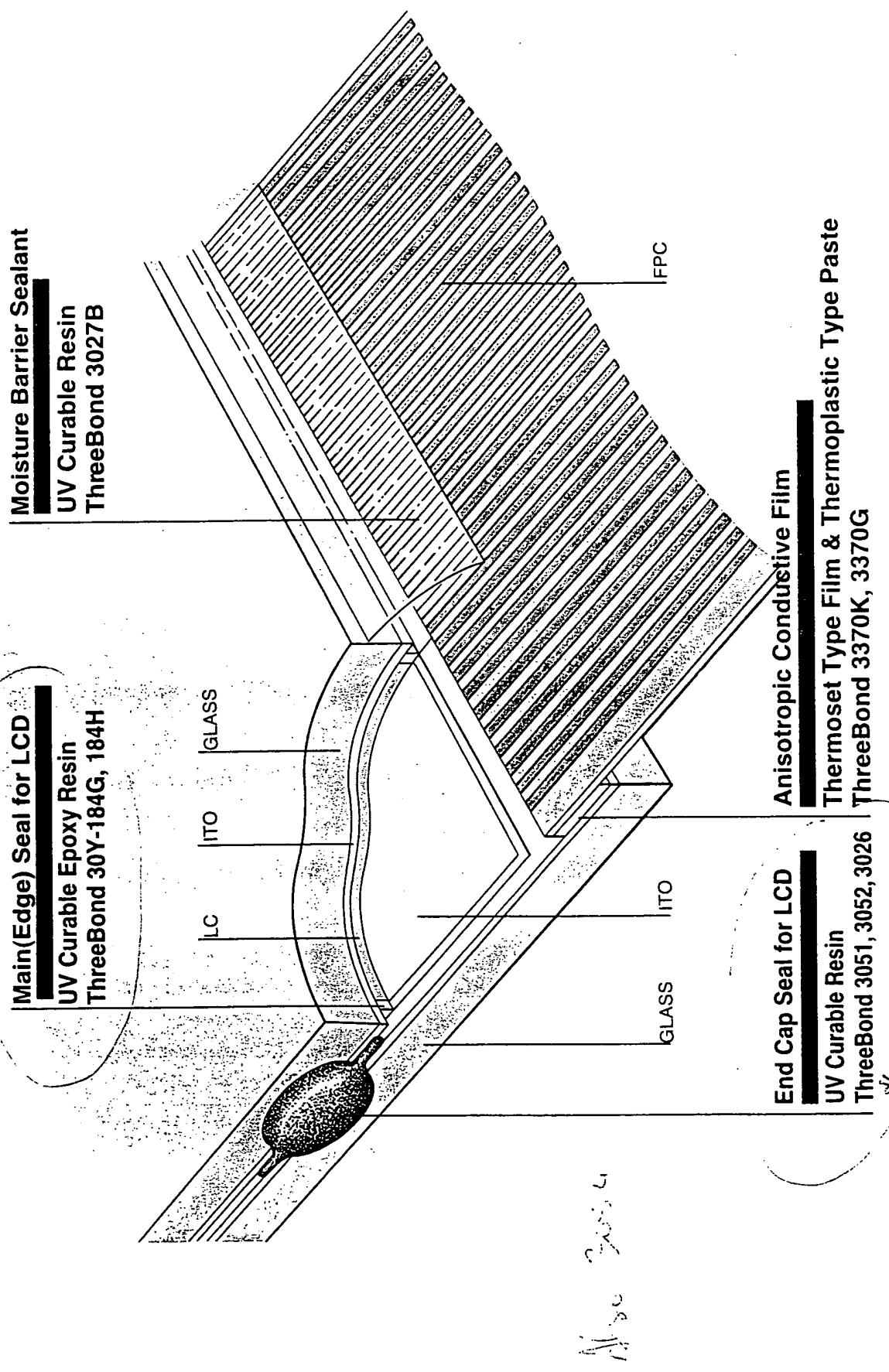
#### ■ Main Feature

- ① Connect all electrode at once
- ② Screen printing method widens the application range in term of the electrode size and thickness.

#### ■ Container Size: 200, 500g Plastic Bottle



# ThreeBond's LCD Applications



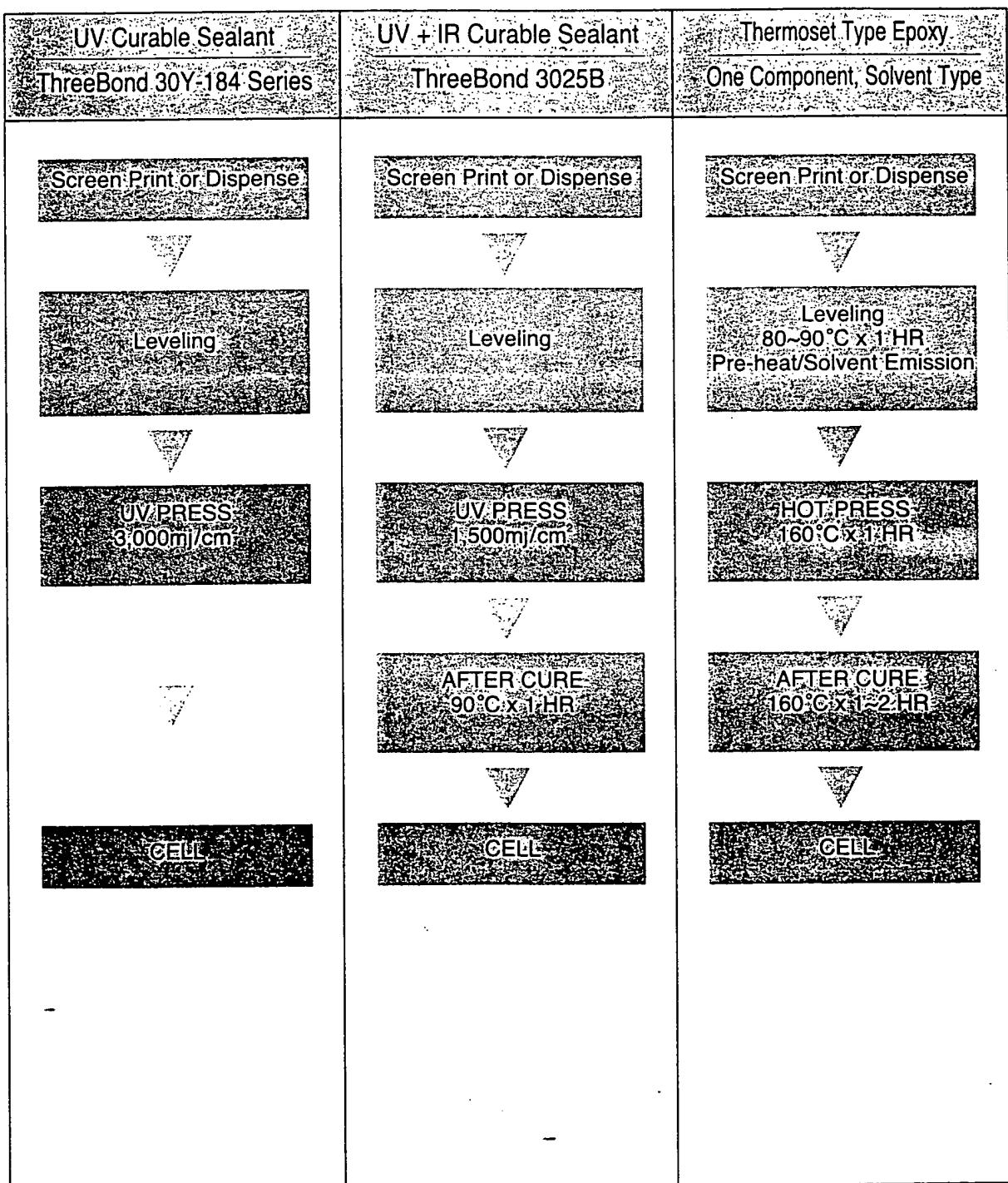
## Comparison manufacturing process between UV curable sealant, ThreeBond 30Y-184 series and thermoset type epoxy resin at Main Seal of LCD.

Conventional one component epoxy needs drying time for solvent volatilization, then another 2-3 hours are needed for full cure. Therefore glass substrate has stress, it is relatively poor for throughput and reliability.

On the other hand ThreeBond's UV Curable Main Sealant can be cured within a minute, making manufacturing time shorter.

The type of after cure necessary requires 1 hour at 90°C, so influence to glass substrate should be minimized to retain the stress.

Therefore cell manufacturing process cannot be done without UV curable main sealant.



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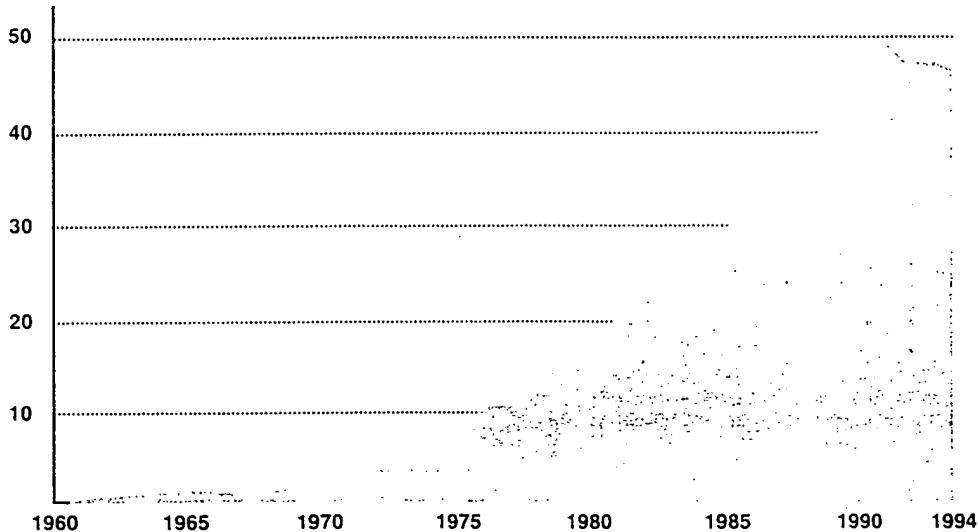
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FAX/TEL.  
362.

- HEADQUARTERS ADDRESS: 1456 Hazama-cho, Hachioji-shi, Tokyo Japan
- INCORPORATION DATE: May 1955
- CHAIRMAN: Osamu Ukumori
- PRESIDENT: Satoru Kaneko
  
- ASSOCIATES: 1,300 (250 outside Japan)
- SALES OFFICES: 135 (15 outside Japan)
- MANUFACTURING PLANTS: 16 (6 outside Japan)

• GROUP NET SALES:

• *¥ billion*



• HISTORY (MAJOR BUSINESS DEVELOPMENTS):

1955	Company founding Three Bond No. 1 Liquid Gasket	1992	Three Bond Research Center (Cincinnati) Atlanta Branch Office
1960	Solvent type Screw Locking Agent	1993	Seoul Liaison Office
1965	Anaerobic adhesive	1994	Mexico Liaison Office
1969	Cyanoacrylate adhesive		Three Bond Hong Kong
1973	Three Bond of America		UV Silicone
1974	Three Bond Do Brasil		UK Division ISO 9002
1975	Pre-applied adhesive for fasteners	1995	Kuala Lumpur Representative Office
1976	Three Bond Europe		Three Bond Co., Ltd. ISO 9001
1983	UV adhesive Research Center (Tokyo)	1996	Three Bond Europe ISO 9002
1985	Australia Branch Office		Beijing Liaison Office
1986	Anisotropic electroconductive adhesive Three Bond USA UK Division		Shanghai Liaison Office
1987	Three Bond International Three Bond Tec. (Singapore)		Jakarta Representative Office
1990	Thai Representative Office		
1991	Detroit Branch Office Düsseldorf Representative Office		
	Milan Liaison Office		

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